P-250 - SCREENING OF ANTIOXIDANT ACTIVITY IN DIFFERENT COFFEE BLENDS

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Background

Coffee beverages, prepared from roasted coffee beans, are widely consumed throughout the world for their physiological effects and attractive aroma and taste.Two species are of significant economic importance Coffea arabica (Arabica) providing 75% of the world production and Coffea canephora (Robusta) wich provides 25% of the world production[1]. Several studies have indicated that a strong antioxidant activity (AA) of coffee is generally associated with its content of phenolic compounds.

Chlorogenic acids (CGAs), which include many different isomeric forms, are the predominant phenolic compounds in coffee beans.The aim of this study was evaluated the antioxidant activity of the different blends with different proportions Arabica/Robusta extracted with a single-dose capsule system, for a medium roasting.

Method

Twelve blends supplied by Delta Cafés were analyzed. Total Phenolic compounds (TPC) were analysed using the method Folin-Ciocalteu [mg gallic acid equivalent (GAE)/coffee] and AA using two methods: ABTS [mg ascorbic acid equivalent (EAA)/coffee] and DPPH [mg Trolox equivalent (ET)/coffee]. The phenolic compounds profile was determinated by LC-MS.

Results & Conclusions

Based on TPC and AA results it was possible to observe that exist inter-lot variability (p<0,05), although that fact only occurs in some blends. High positive correlation between TPC and AA (by ABTS method) was observed, which means that the antioxidant activity is mainly related to the presence of the phenolic compounds in the blends. Similar tendency was observed for DPPH results, although lipophilic antioxidants were evaluated in this method. In general the increase of Robusta coffee in blends led to an increase of the TPC and the AA (no linear relationship) as observed for the best five blends. These blends showed similar phenolic compounds profile, including as main compounds: neochlorogenic acid (5-CQA), chlorogenic acid (3-CQA), cryptochlorogenic acid (4-CQA), feruloylquinic acid, 4,5-Dicaffeoylquinic acid, 3,5-Dicaffeoylquinic acid and 3,4- Dicaffeoylquinic acid. The results demonstrated the high antioxidant potential of these blends related with the high CGA's concentration, proving the importance coffee consumption as natural source of antioxidants compounds.

References & Acknowledgments

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